Spring 2012

Tallgrass Prairie Center Newsletter, Spring 2012

Tallgrass Prairie Center.

Tallgrass Prairie
CENTER
Restoring a National Treasure

The Tallgrass Prairie Center restores native vegetation for the benefit of society and environment through research, education, and technology.

Spring 2012

Twenty Third North American Prairie Conference: Celebrating Our Prairie Heritage

By Daryl Smith

The 23rd North American Prairie Conference (NAPC) will be held August 6-10, 2012, at the University of Manitoba in Winnipeg, MB. The conference hosts are looking forward to showcasing the great strides made in recent years in prairie conservation, restoration, management and landscaping. Using the theme, Celebrating Our Prairie Heritage, they plan to explore their prairie past, the current state of knowledge and consider the future. Furthermore, they intend for all participants to have a good time in the process. Please log onto http://www.napc2012.org/ for addition conference information.

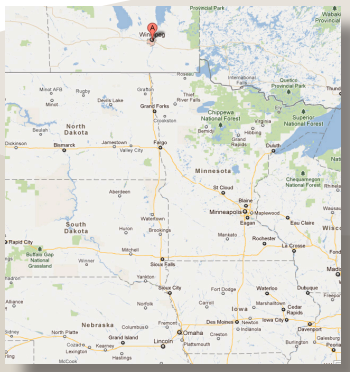
Building upon the tradition started by Peter Schramm in 1968 with the first conference on prairies and prairie restoration, the NAPC has developed a tradition of excellence in native prairie research, conservation and restoration of one of the worlds most productive yet most endangered ecosystems. The biennial conferences and their participants have spawned great interest, enthusiasm and efforts to better understand, appreciate, manage and conserve this vital part of North America's natural history.

This conference provides a real opportunity to expand our prairie boundries as it is only the second time this major international prairie meeting has been held in Canada. The last conference in Canada was at Windsor, ON in 1992. I am excited about the great opportunity to learn more about the northern prairies and compare vegetation differences. For example, big bluestem reaches its northmost extension a short distance northwest of Winnipeg.

Some pre-planning for the trip is needed as a passport for entry into Canada and return to the United States is required. Iowa has often provided the largest number of participants to recent conferences. I hope we will once again have a large contingent of Iowans in Winnipeg. According to Map Quest, driving from Des Moines is 700 mi in 11 hrs, from Cedar Falls 675 mi in10 hrs, from Sioux City 540 mi in 8 hrs, and from Mason City 595 mi in 9 hrs.

Potential Bus Charter to Winnipeg for Conference

To reduce travel costs, the Tallgrass Prairie Center is willing to coordinate chartering a bus from Iowa to the conference. The trip details are tentative, but need to start being formulated. For a one-day trip, we could depart Cedar Falls at 6 a.m. with pick-up stops in Mason City and some place on I-94 north of Sioux City arriving at University of Manitoba prior to the opening reception at 7 p.m. An additional stop could be added at the junction of 20 & I-35 if needed. We will need to know soon if a sufficient number of people are interested in the bus option. If we fill one 47 passenger charter bus, the cost should be about $125/person.



Since the charter bus possibility was announced at the Iowa Prairie Network in late January, we have received only 3 commitments to ride.

If interested or questions, email daryl.smith@uni.edu, call 319-273-2238 or write Daryl Smith, Tallgrass Prairie Center, UNI, Cedar Falls, IA 50614-0294.

Burning Prairie Hay To Generate Electricity

By Dave Williams

We consume lots of electricity in the United States. Our super large TV's, giant refrigerators, cell phones, computers, and even hybrid cars have dramatically increased our need for electrical power over the past few decades. Most energy experts predict that our electrical consumption will increase by 11% in the next ten years (U.S. Dept. of Energy 2009). Here in Iowa, 72% of our electricity is generated from burning coal (Iowa Utilities Board 2010). It seems pretty clear that more coal will be needed to meet our increased energy demand.

There are some compelling arguments to support continued use of coal to generate electricity. It offers us energy security-we don't have to import coal because there are enough domestic sources of coal in the U.S. to last another 200 years (American Coalition for Clean Coal Electricity 2012). Coal is relatively cheap as compared to other fossil fuels and it creates jobs and drives our industrial economy (Nuclear Energy Institute 2010, U.S. Dept. of Labor 2012). However, there are consequences. Coal generates toxic emissions like mercury, lead, arsenic, and radioactive compounds directly harmful to human health (Environmental Health and Engineering 2011). Other emissions are harmful to the environment like sulfur oxides and nitrogen oxides that reduce lake and stream water ph, which harms aquatic wildlife (Environmental Health and Engineering 2011). And let's not forget the health and safety consequences which affect miners who work in the coal mines.

Fortunately, there are alternative fuels that can be mixed with coal to reduce coal consumption. This has been done for many years in Europe. In 1973 for example, 95% of the energy consumed in Denmark came from imported coal, oil, and natural gas (Danish Ministry of Climate and Energy 2011). Using renewable energy sources, Denmark projects that they will be independent of fossil fuels by 2050 (Danish Ministry of Climate and Energy 2011). Experiments with the same kinds of alternative burning processes in Iowa have had some promising results. Our power plants have successfully burned coal mixed with dried oat hulls, corn stalks and a prairie grass (switchgrass) to generate electricity (University of Iowa 2009, Prairie Lands Biomass Project).

Cutting prairie hay in fall

Baling prairie hay in fall

Bale grinder and cubing machine

Pelletized prairie power fuel

In 2007, the Iowa Legislature and subsequently, the Iowa Office of Energy Independence funded the Tallgrass Prairie Center for the 'Prairie Power Project' to develop an optimum mix of prairie grasses and wildflowers for use as an alternative renewable fuel to generate electricity. The Tallgrass Prairie Center planted 100 acres of different seed mixes of native species on Black Hawk County Conservation Board Cedar River Natural Resource Area just south of Washburn, Iowa. After three growing seasons, the site was harvested in early April this year and netted 165 tons of prairie hay. The hay will be densified (pelletized) and Cedar Falls Utilities (CFU) will conduct a test burn this summer. The test burn will consist of 100% prairie hay so the emissions can be measured in a stack test and the results can be compared to coal emissions. If this project is successful, prairie grasses and wildflowers could become an alternative fuel source for electrical generation.

Prairie grasses and wildflowers are an ideal renewable fuel source for marginal farmland in Iowa and throughout the tallgrass prairie region of the upper Midwest. Marginal farmland includes: steep areas that would experience high levels of soil loss if row cropped, areas prone to frequent flooding, and areas with sandy or rocky soils. Row cropping in these areas would be a risky endeavor, yet many farmers attempt to row crop in spite of the difficulties. Prairie grasses and wildflowers have adapted to these difficult sites for thousands of years. Now perhaps, prairie hay can offer farmers an alternative crop without converting marginal lands to row crops.

Burning prairie hay to generate electricity is a good idea. Prairie hay is a value -added and renewable commodity for landowners. Perennial, deeply rooted prairie plants improve water quality by increasing water infiltration and reduce potential flooding. Planting marginal farmland to prairie grasses and wildflowers instead of row cropping reduces soil loss from wind and water erosion and reduces fertilizer and pesticides applied to the landscape. And of course, we know that prairie grasses and wildflowers increase the biodiversity of both plants and animals and enhances the landscape; part of what makes living in Iowa so appealing.

From an economic standpoint, burning prairie hay will

allow Iowa landowners a way to benefit from their marginal land. It will reduce harmful coal emissions at Iowa's power plants. A market for prairie hay would create new transportation and processing jobs. Planting prairie grasses and wildflowers to use for fuel to generate electricity is good for the producer, good for the economy, and good for the environment.

For more information on the Prairie Power Project contact Dave Williams, (319) 273-7959 or email dave.williams@uni.edu.

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22nd NAPC 2010 Preceedings Available

Preceedings of the 22nd North American Prairie Conference. Dave Williams, Brent Butler, Daryl Smith, Editors. Aug. 15, 2010, University of Northern Iowa, Cedar Falls, IA. 238 pages. PDF available online at *http://napc2010.org/*

Preceedings are available in print ($25.00) or CD ROM($5.00), prices include shipping. To order, email ***mary.weld@uni.edu***, or call ***319.273.3836***. Or simply mail a check for the amount indicating which item(s) you'd like to order. Be sure to include return mailing address. Make checks out to:

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NEWSLETTER

This newsletter is published electronically twice per year. For subscription information or questions, contact the editor: gregory.houseal@uni.edu

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Transportation Enhancements: The future of this little known program may be in doubt

by Kirk Henderson

Transportation Enhancement (TE) activities are federally funded projects that enhance the transportation experience by improving the cultural, historic, aesthetic and environmental aspects of our transportation system. Eligible projects include pedestrian and bicycle trails, acquisition of scenic or historic sites and easements, landscaping and beautification, historic preservation, removal of outdoor advertising, archeological planning and research and environmental mitigation of runoff pollution and provision of wildlife connectivity.

The TE program was created in 1991 as part of the Intermodal Surface Transportation Efficiency Act (ISTEA). It was included in the Transportation Equity Act for the 21st Century (TEA-21) authorized in 1998 and continues in the current multi-year transportation authorization: Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU) passed in 2005. SAFETEA-LU expired in 2009. Since then the TE program has been funded through extensions of SAFETEA-LU.

For 20 years these transportation funding bills have required (mandated) states to spend 10% of the money, roughly 1.5% of the Federal-aid Highway Program, on a variety of transportation enhancement projects. The TE program administered by Iowa Department of Transportation supports projects in three categories: Trails, Historic Preservation, and Scenic and Natural Resources.

The effect has been enormous. Hundreds of Iowa trail projects have been constructed with money from this program. TE funds have also helped protect land along the loess hills scenic byway in Woodbury County, a loess hills prairie remnant in Council Bluffs, a scenic overlook property near the Highway 20 bridge above the Iowa River and a thousand acres between Yellow River State Forest and Effigy Mounds National Monument.

This year marks the 15th year a portion of Iowa's TE funds have been used to purchase prairie seed for county roadside plantings. In a few weeks 40 counties will travel to the Roadside Office at the Tallgrass Prairie Center at UNI

and pick up a share of 12,600 lbs of native grasses (9 species) and 3,600 lbs of wildflower seed (25 species). Over the years 82 counties have planted 15,000 acres of roadsides to native vegetation with TE funded seed.

Under the current law TE funds cannot be used for road construction or maintenance. But this is probably going to change. Indications are that the next transportation bill will make such spending voluntary and left up to individual states whether to continue their TE programs.

TE funds increased roadside prairie planting dramatically. They have made possible a wide range of other worthwhile projects. At some point in the near future it may be up to Iowans, and not congress, whether this program continues. Visit www.enhancements.org for more information. Click on State Profiles, Project List and Project Examples (Scenic & Beautification) to see how Iowa has used these funds. Then talk to your local legislator.

Meet Dustin Graham, New Graduate Student, Biology at UNI/Tallgrass Prairie Center

Dustin completed his undergraduate degree (Biology and Religion, double major) at Northwestern College, Orange City, IA in 2008. Dustin's graduate thesis project will be a component of the **Prairie Power Project** (described more fully inside this newsletter).

As he begins his graduate program, Dustin summarized, "I am studying the use of diverse plantings of natives as a feedstock for bioenergy production. We are exploring the utilization of native mixes to provide a significant energy source and ecosystem services while being more profitable to the farmer than a monoculture." Dustin's first field season for data collection will be this summer and fall.

Iowa Wildflower Week is rapidly approaching, May 6-12, 2012. Visit ***http://www.public.iastate.edu/~herbarium/inps/index.php*** to see events currently on the calendar. If you know of additional events that could be included, contact Dianne Blankenship (*bennaid@hotmail.com*).

Iowa Prairie Heritage Week, sponsored by Iowa Prairie Network, is September 9-15, 2012.